In speaking of tar fuel, on p. 5, the authors say:—

> "The modern tendency, however, is to distil the tar first, and recover its many valuable constituents such as benzene, naphtha, carbolic acid, naphthalene, creosote, and also the tar colours discovered by Perkin."

This looseness of expression might lead some to believe that the coal-tar colours were a distillate from tar.

A few pages further on solid fuels are subdivided into organic and inorganic, the latter consisting of sulphur, silicon, phosphorus, and aluminium, the latter being credited with giving a heat quite equal to that produced in electric furnaces, a statement which will be doubted by the users of "Thermit."

In the chapters devoted to the construction of the modern form of bye-product recovery coke-oven, the authors are at their best, and this portion is well illustrated with many reproductions of photographs from existing plants, as well as elaborate sections and plans, yet the same fault is to be found as in other parts of the book, that is, the principles which govern the various stages in the process of carbonisation, and the chemical changes taking place during the operations, are ignored, whilst details of mechanical interest only are elaborated.

In the preface the reader is told that the book embodies a series of lectures delivered at a technical college to a class of men engaged on coke-ovens, and, interesting as they must have been to the audience, it cannot be too strongly impressed upon those delivering lectures of this kind that, unless there is given a foundation of scientific facts and theory upon which the practical man can build and evolve original ideas, the value of such lectures must be enormously lessened.

Not only is the theory of carbonisation neglected, but the coke produced during the process of gas manufacture is hardly mentioned, although the gas coke produced in the United Kingdom more than doubles in quantity that made in bye-product recovery plants, the beehive coke-oven, with its wicked waste of tar and sulphate of ammonia, still being the most favoured means of squandering our already depleted coal-measures.

At the present time there is a great opening for an author who, with scientific knowledge of the subject, can gather together the work of Stein, Flack, Richters, Muck, Parry, Thorner, Lunge, Knublauch, and others on the carbonisation of coal, and weave into tangible shape the lines upon which economy of coal, abolition of smoke, increase of manurial ammonium compounds, and enhanced values for our tar products can be obtained.

THE HUMAN CENTRAL NERVOUS SYSTEM.

Voordrachten over den Bouw van het centrale Zenuwstelsel—een Voorbereiding tot de Kliniek der Zenuwziekten. Door Prof. J. W. Langelaan. Pp. vi+485, and 309 text-figures. (Amsterdam: A. Versluys, 1910.)

THIS consists of the course of instruction on the embryology and anatomy of the human nervous system given in Leyden in the sessions 1907–8 and 1908–9 put into the form of a book, which is illustrated with an excellent series of photographs of sections and drawings by Heer G. Koster. It is quite a revelation to find what soft effects of light and shade the artist has obtained with pen and ink, without sacrificing accuracy and clearness, in the production of these admirable illustrations.

The book is subdivided into four sections, dealing respectively with (A) the development of the human central nervous system (pp. 1–98); (B) the nature and histogenesis of the nervous tissues (pp. 99–137); (C) the form of the various parts of the central nervous system (pp. 138–286); and (D) the structure of the central nervous system (pp. 287–485).

The most distinctive section of the book is part A. Part B contains a good and impartial summary of the present state of our knowledge concerning the mode of development and the nature of nerve-fibres and cells, and supplies the reader with a good bibliography. Although parts C and D, on the whole, are excellent accounts of the subjects of which they treat, they present no special features which the student cannot find elsewhere in text-books written in languages more generally understood than Dutch is. Moreover, the text of these sections is not so "up-to-date," nor is the bibliography so satisfactory as those of the early sections.

Section A is a model of the manner in which embryology should be taught to medical students.

It begins with a clear account of the early stages of development of the primate embryo, leading up to the formation of the nervous system, and then describes the history of the further growth and differentiation of the brain and spinal cord in *human* embryos. Most books on embryology are rendered confusing to the student by the introduction of descriptions of what happens in the chick or the developing rabbit, with tags of miscellaneous information concerning the embryos of other vertebrates, and the plea is urged in support of such a mode of procedure that it is the comparative method. But the use of data culled from comparative anatomy in works on human anatomy can be justified only when they help to elucidate the latter or explain some general principle which cannot be appreciated from the mere study of one vertebrate; unless the information directly serves one of these two purposes it is worse than useless to insert it. One of the great merits of Prof. Langelaan's work is that it gives a straightforward account of the human brain and its development; and no comparative data are inserted in the embryological section except to explain stages in human development which are not known from direct observation of human material; and then he is careful to rely almost exclusively on information obtained from the study of the mammals most nearly related to man that supply the desired facts.

A considerable part of the embryological section of the work is based upon the author's own researches, which are already familiar to readers of *Brain* (1908) and the *Anatomischer Anzeiger* (1908); and this fact gives section A the freshness which springs from first-hand knowledge, in contradistinction to the staleness of conventional errors which

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mar all mere compilations, however conscientiously they may have been done.

Although there are a good many errors, both of commission and omission, in this book, and many statements which we cannot endorse, the work is, on the whole, the best elementary text-book on the anatomy of the human nervous system, and it certainly contains the most useful account of the development of the human brain that has appeared in a student's text-book. If it were not for the difficulty of language the book would appeal to a large class of students and medical men. G. E. S.

OUR BOOK SHELF.

The Miners' Guide. By F. P. Mennell. Pp. viii+196. (London: Gerrards, Ltd., 1909.) Price 4*s.* net.

This little book aims at being a guide to the prospector, and should largely attain its object. It is neither lengthy nor profound, but sketches, lightly, those principles of geology it is desirable that the prospector should be acquainted with.

In discussing the source of metals in lodes the author appears to lean strongly to the theory of lateral secretion, and is at some pains to show how large a quantity of metal may be contained in the rocks of a mineral district, even when barely perceptible traces of its existence can be detected by analysis. He is a firm believer in the underground circulation of meteoric waters as a means of dissolving and concentrating these metals in lodes and other deposits, and seems to doubt the existence of a bary-sphere.

The description, in chapter iii., of the characters of ore bodies is all too short, and chapter iv., which is devoted to prospecting, might also be expanded with advantage; but this is supplemented later by a review of the occurrence of, and prospecting for, gold, silver, platinum, the base metals, and other useful minerals and precious stones. An important feature of this portion of the book is a general account of the uses of the different minerals, and the conditions necessary to be observed in preparing them for the market. Prices and production also receive some attention, and the more important localities are cited. Chapter xi. deals with sampling, and in the space available gives a good description of the operations that must be undertaken, and the methods of computation that must be adopted, to ascertain the average value of a lode sampled. The following statement, however, "As a guide to the possibilities of undeveloped ground, geological knowledge is often worth any amount of sampling, but the miner can only judge from his own experience what scientific knowledge enables the geologist to gauge by the help of theories founded on other people's experience as well as his own," seems to assume a dangerous position and to tend to a reliance on theory, rather than actual testing, to determine the value of any mineral deposit.

The working notes are necessarily fragmentary, dealing as they do with alluvial working, including dredging; lode mining; methods of crushing, cyaniding, &c., in one short chapter. The book, however, contains many useful hints, and is one that should certainly appeal to the prospector in far lands.

The Coccidae of Ceylon. By E. Ernest Green. Part iv., with 39 plates. Pp. 251+344; plates xciv.–cxxxii. (London: Dulau and Co., 1909.)

The work before us well illustrates the enormous recent development of our knowledge of entomology, for when Mr. Kirby published his "Catalogue of the Described Hemiptera Heteroptera and Homoptera of Ceylon," in the Journal of the Linnean Society (Zoology, vol. xxiv., 1891), he was only able to enumerate seven species of Coccidæ from the island—*Lecanium mangiferae*, Green (1889); *L. coffeae*, Walk. (1852); *L. viride*, Green (1889); *L. nigrum*, Nietn. (1861); *Pseudococcus adonidum*, Linn. (1758); *Coccus*(?) *floriger*, Walk. (1858), and *C. laniger*, Kirb. (1891).

Shortly afterwards, however, Mr. Green took up the systematic study of the Coccidæ in earnest, with such good results that he soon accumulated materials for a monograph of the Coccidæ of Ceylon. At first he estimated that it would probably run to four parts, containing thirty plates each; but now he finds that "the present (fourth) part contains many additional plates, which (with the several supplementary plates) bring the total number up to 135, or fifteen more than the number promised to my subscribers. For the completion of the monograph it will be necessary to bring out a fifth part, of double size, containing from fifty to sixty plates." Even so, considering the rapidity with which material accumulates, we should not be surprised if a further extension, or a speedy supplementary part, may not be found necessary.

But, however this may be, part iv. contains the conclusion of the subfamily Lecaniinæ, with nine genera and nineteen species; and the new subfamily Asterolecaniinæ, with six genera, 24 species, and two varieties.

The work is based almost entirely on Mr. Green's personal observations, and a large proportion of the species described and figured are new. We have nothing but praise for the text and letterpress of this monograph of a family of insects which is important both as destructive to vegetation and, in some instances (as in the cochineal insect), as yielding products of considerable commercial value.

Colonsay, one of the Hebrides. Its Plants: their Local Names and Uses. Legends, Ruins, and Place-names. Gaelic Names of Birds, Fishes, &c. Climate, Geological Formation, &c. By Murdoch McNeill. Pp. viii+216. (Edinburgh: David Douglas, 1910.) Price 2*s.* 6*d.* net.

The main purpose of the author is to publish a list of plants collected during some years' stay on the island, to which he has added general notes on the history, geology, and fauna. The author has been a keen observer of the birds, both migratory and native; among the former are the barnacle goose, pintail duck, and wild swan, while eider-duck and cormorants live on the outlying reefs or unfrequented coast, and guillemots, buzzards, and kestrel nest on the northern shores. In the same localities with the eider-duck are found shoals of seal, both the large grey and common species.

A chapter is devoted to the description of the woods, lochs, and pastures. The lochs are the most interesting botanically. The white water-lily, the common reed, and bottle sedge are the most conspicuous plants in the shallows; species of Potamogeton and *Callitriche autumnalis* are abundant in the deeper waters. The enumeration of flowering plants and ferns amounts to 567 species, but this number includes garden escapes. The author has been fortunate in obtaining the cooperation of special authorities on certain genera. Mr. A. Bennet has identified a dozen species of Potamogeton, and a similar number of Rubi are given on the authority of Rev. W. M. Rogers. Among the more typical and rare plants are *Spergularia rupestris, Lobelia Dortmanni, Sedum roseum, Myosotis repens* and *Ligusticum scoticum.*

The book is pleasantly written, and contains a considerable amount of observational matter scattered through its pages. The Gaelic names and quotations will only be appreciated by a limited number of readers.

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